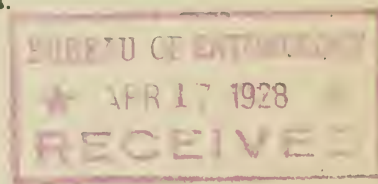


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SPRING PLANS IN MICHIGAN

REGULATORY As thorough a clean-up as possible in all parts of Michigan no matter how lightly infested will be the aim this spring, reports A. C. Carton, Director, Bureau of Agricultural Industry, Michigan State Department of Agriculture. In the area with more than 1 per cent infestation located in the eastern part of the State, the rules and regulations will be in full force and a thorough clean-up will be obtained. This area includes the entire counties of Macomb, Monroe, St. Clair, and Wayne, and designated townships in Lapeer, Lenawee, Oakland, and Sanilac. The less than 1 per cent infested territory, comprising 29 counties, will be under the supervision of a county supervisor who will cooperate with the farmers, the educational forces, the county agricultural agents, and the farmers' corn-borer committee in getting as complete a clean-up as possible. There will not be a compulsory clean-up in this area.

EDUCATIONAL The Michigan State College Extension Service has arranged a busy spring corn-borer program. Forty plowing demonstrations have already been scheduled for the area. In last year's infested territory, at least one demonstration per county will be staged, while in the new counties considerably more will be held. The demonstrations will start in the southern counties and continue north as the season advances. The infested area of Michigan stretches from the Ohio-Indiana line to the Straits of Mackinac, making it necessary to work under varying weather conditions.

THE WINTER'S RECORD

A successful winter program has been concluded. As in the other States, a corn-borer exhibit truck was run in Michigan. Heralded as the "borer school on wheels," the truck presented a novel opportunity of reaching a great number of people. Equipped by the United States Bureau of Entomology, the truck reached the Michigan State College of Agriculture in December when the exhibit itinerary was arranged under the direction of H. C. Rather, extension leader in corn-borer control work.

Starting out in January, up to March 25, the exhibit had visited eight counties and made 110 stops. A total of 5,406 people had seen the exhibit and talked with the attendants.

Summing it up

	Attendance
2 County-agent conferences.....	150
48 Low-cutting demonstrations.....	1,250
8 Corn-borer tours.....	1,200
9 Plowing demonstrations (last fall).....	1,700
3 Plowing contests.....	2,500
110 Stops corn-borer exhibit truck.....	5,406
272 Lectures and movie meetings.....	14,851
Exhibits at State fair, county fairs, and farmers' weeks.....	150,000

INSPECTORS AND SUPERVISORS FOR NEW YORK AND PENNSYLVANIA

Corn-borer inspectors and supervisors for the infested area under regulatory control in New York and Pennsylvania were announced April 1 by H. M. Bartley of Erie, Pa., associate Federal entomologist in charge of Government control in the two States.

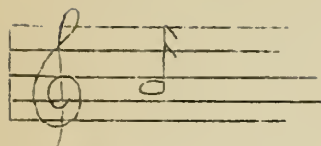
The list of men recruited for this service, according to Mr. Bartley follows closely the recommendations of local town and county corn-borer committees, which were invited to suggest names of men capable of handling this work with tactfulness, courtesy, and efficiency.

The inspectors will visit every farm in their allotted territory before May 1, the date when farmers in the regulatory area must have their corn stubble effectively buried and all trash destroyed, and advise the occupant or owner just what is necessary in his case to do a satisfactory job.

The supervisors are: Erie County, N. Y., Leland Wolfe, Federal, G. F. Wheaton, State. Chautauque and Cattaraugus Counties, N. Y., H. V. Hotchkiss, Federal, Harold F. Smith, State. Niagara County, N. Y., Herman H. Lawrence, Federal, L. F. Stickland, State.

A NEW NOTE

IN MACHINERY



"Some suggestions for the Construction and Use of Stalk Shavers" is the title of a new leaflet issued by the Ohio Extension Service as Leaflet No. 14, European Corn Borer Series. The pamphlet gives explicit directions, pictures, and diagrams for making two types of stalk shavers; a foot control machine and a simpler type. The machine is a combination of ideas and experience of a number of farmers, county agents, and engineers who have made and used stalk shavers.

FOR EXAMPLE



The value of equipment of this kind was observed by Paul E. Johnston, farm management demonstrator, U. S. Department of Agriculture on a recent trip to Lucas County, Ohio. He said: "While in Lucas County I visited two farmers who were cutting off standing stalks in preparation for raking and burning. On one farm the operator was cutting these stalks with a hoe at the rate of 3 acres per day. On a near-by farm the operation was being done with a one-horse, homemade sled type cutter which would cut two rows at a time and 15 acres per day. In other words, the one man was doing five times as much work and with less effort. There was very little difference in the quality of the work being done in so far as I could see."

FURTHER INVESTIGATION IN MICHIGAN



Further studies will be made at the State experimental substation at Monroe again this year. Farm crops studies with corn studies, under the supervision of Prof. J. F. Cox, with R. A. Marston in active charge of the station, will be made which will include experiments with dates of planting, fertilizers, varietal tests, topping experiments. Further work will also be done with the Maize Amargo cross which Mr. Marston succeeded in obtaining and which so far has proved borer-resistant.

In conjunction with this work, entomological studies will be conducted under the direction of Prof. R. H. Pettit, with C. B. Dibble in active charge. Agricultural engineering experiments will be continued by Prof. F. E. Musselman and members of his staff.

WHAT'S WHAT
IN NEW YORK AND MICHIGAN
ALONG INFORMATIONAL LINES

From Bristow Adams, editor at the New York State College of Agriculture, comes word that this year the information service on the corn borer in New York is run strictly on a news basis with the main accent on "spot" news. The State papers, daily and weekly, are being supplied with general corn-borer news and information from the college of agriculture. The local news in the counties in which control measures are in effect is being handled by LeRoy E. Fess. Mr. Fess is an excellent photographer and has taken a number of pictures which have appeared in local papers and some have had national circulation.

The radio is being used at least twice a week. These talks are being given by entomologists from the College of Agriculture at Ithaca and at the New York State experiment station at Geneva; by members of the regulatory force at Albany and in the field; and by the special corn-borer agents. The subject matter of these talks is also being handled as news.

County agricultural agents are getting out news material for the papers within their own counties - such news matters as the itinerary of the corn-borer exhibit truck. The agents are making use of letter-stickers, lantern slides, posters, and various other items furnished by the Federal Government or by the State.

The continuation of the Information Service in Michigan this spring will follow the general plan used last year, says B. R. Froulx, district agent in corn-borer information. Newspapers are being furnished with timely information at the present time, which will be continued. Lantern slides, posters, bulletins, and pamphlets have been furnished the county agents. Field demonstrations are being supported with suitable material.

Syndicate news organizations, farm papers, and the Michigan weekly papers have been widely used to disseminate information concerning corn-borer control. Straight educational stories on corn-borer control have been furnished to the weekly papers regularly; also, current information concerning quarantines and clean-up regulations. The daily papers and press service are used mostly for spot news, although during the spring months the daily newspapers are being furnished with timely informational stories on corn-borer control. The vocational agricultural high-school teachers in Michigan are teaching the borer story again this year to their pupils from material furnished to them by the Information Service. The cut service and special radio service are meeting with favor.

The Information Service has furnished local stories by counties for the exhibit truck and meetings. Ten thousand corn-borer posters were supplied for advertising these meetings.

NEW YORKER DOES HIS BIT AGAINST THE BORER



Bert J. Dorsey, superintendent of the local dairy plant of an ice cream company near Leon, N.Y., hit upon a good way of bringing the corn borer clean-up matter to the attention of the farmers in his neighborhood.

He sent a rush order to the Salamanca headquarters of the county control forces for 600 of the "Stop the Corn Borer" stickers. When he mailed the monthly milk checks to the plant's 200 or more farmer patrons on April 1, he pasted borer stickers conspicuously on both the stub of the checks and on the envelopes.

"Farmers may and may not read bulletins, but they are sure to read their checks, argued Superintendent Dorsey. "They will see this corn-borer poster, and if I am not mistaken they will drink in its legend; 'Stop the Corn Borer - Clean Up Before May 1.'"

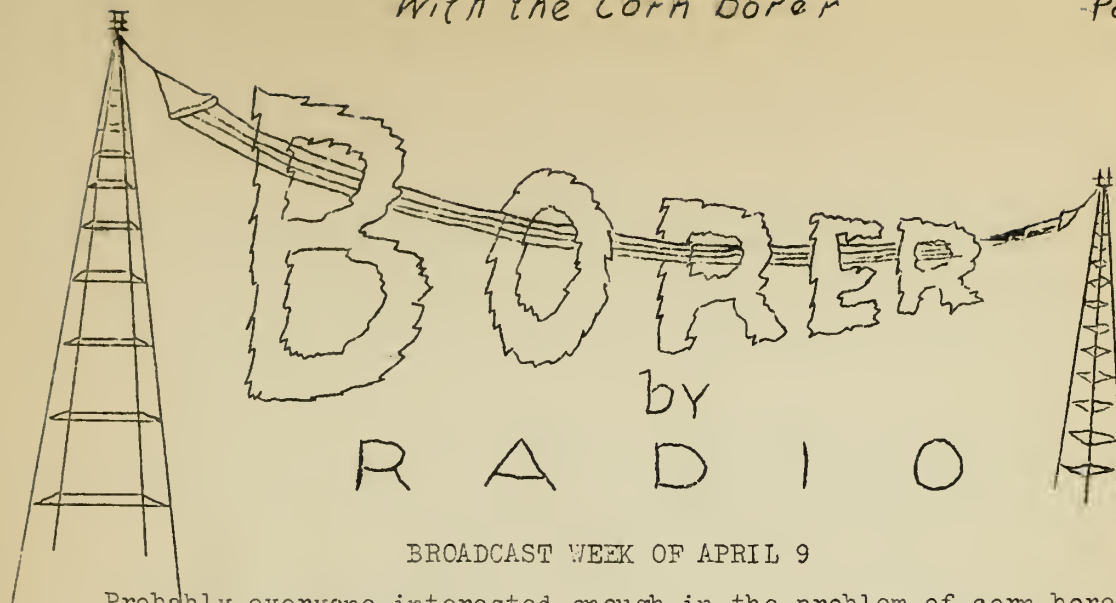
Besides being a dairy-plant manager, Mr. Dorsey is himself a farmer and corn grower. His farm was in the regulatory area last year, and from experience he knows the value of cleaning up well and urging all his neighbors to do likewise.

EDUCATIONAL WORK IN PENNSYLVANIA

All the farmers in the quarantined area in Pennsylvania have at some time either attended a corn-borer meeting or received corn-borer control literature. A mimeographed corn-borer circular issued at State College has been very popular, 500 copies being distributed in Beaver County, and 1,000 in Wayne County. Meetings to tell the farmer of the corn-borer menace and advise him as to control measures, have been held in Clearfield County.

OUT IN WISCONSIN

They are getting ready for the corn borer out in Wisconsin. The county agent in Walworth County reports that he has had a number of calls to investigate worms suspected by farmers of being corn borers. He says, "We will have to learn to live with the corn borer the same as the South has had to learn to live with the boll weevil. Putting the crop in the silo and good plowing seem to be the greatest help in lessening the damage done by this most serious pest."



Probably everyone interested enough in the problem of corn-borer control to follow a series of radio talks about it knows that other threatening insect pests have been brought under control simply by setting insect "watch dogs"--parasites--upon them.

Farmers generally remember the spectacular success which entomologists scored in California some years ago. The scientists tackled the problem of controlling the fluted scale which threatened to wipe out the orange and lemon industry of California. The fluted scale came from Australia. There the ladybird beetle preyed upon the scale. Ladybird beetles were brought to Los Angeles and liberated upon orange trees there. Within a year the orange trees were in bloom and within five years the fluted scale problem was a thing of the past.

Presto, change! Just like that.

Why not clean up the corn borer in the same way?

In reply, the scientists working at the problem of corn-borer control assure us that they are trying to control the corn borer with parasites, but that parasites alone will not keep down the borers.

"Even with the best of success, judging from previous experience," they say, "it is not likely that important effects of parasites can be expected until several years hence. In the meantime the practical and effective methods of corn-borer control will continue to be feeding corn fodder to livestock, raking and burning, or completely plowing under all the previous year's cornstalks and crop remnants before June 1 of the following year.

The work which has so far been accomplished toward corn-borer control by parasites sums up about as follows:

Three different kinds of native insects have been found to prey upon the borer in the Great Lakes area, and 18 native parasites of the borer are known in New England. BUT, all of these parasites together are able to kill an average of only 1 per cent of the borer.

In favorable years a certain wasplike native insect destroys a considerable number of the corn-borer eggs, but its activities vary so much from year to year that it can't be relied upon. Birds sometimes feed upon corn borers, but with the exception of somewhat local feeding by woodpeckers, birds are not known to have an important influence in reducing the number of corn borers in the United States.

Trying to repeat the success of the campaigns against the fluted scale, and the less complete triumph over the Gipsy and brown tail moths, the scientists have imported from the original sources of the corn borer--certain European countries--12 species of parasites.

Seven of these species in New England and three in the Great Lakes area are now known to be preying on the borer. As the borer was first discovered in Massachusetts, the work has been going on longer there than in any other infested State. The first imported parasites came to Arlington, Mass., nearly eight years ago--in 1920. Before these insects were brought over to this country, they were studied in their European haunts to make sure that they would not harm plant growth. After reaching this country the parasites again were studied in laboratories so that it would be absolutely certain that they would not themselves become plant scourges. Then they were liberated.

To the present, parasites have been liberated at favorable points in each of the five corn-borer States in the Great Lakes area, also in New England, and at the site of an isolated corn-borer infestation near Sherburnville, Ill. Altogether, 1,798,080 individual parasites have been sent out into the infested fields to attack the crop destroyer. The places at which the different species were sent into action were chosen with an eye to finding conditions as nearly as possible like those in the native habitats of the insects. Parasites have been liberated at Richmond, Monroe, and Erie, Mich.; at Bono, Sandusky, and Mentor, Ohio; Silver Creek, N. Y.; Mill Creek, Pa.; St. Joe, Ind.; and at eight places in Massachusetts.

Last season's report on this phase of the corn-borer campaign showed that less than 1 per cent of the borers now are being killed by these parasites. The results, however, have been encouraging considering the length of time it takes to establish a parasite under new conditions.

Some other short cuts to corn-borer control, besides the introduction of parasites have been tried. Probably every known method of controlling insects has been experimented with since 1910 when the borer was first discovered to be a menace to the corn crop.

Insecticides have so far failed because the borer insists on living inside the cornstalk and won't come out to be sprayed.



Moth traps--either light or bait--won't attract a sufficient number of the borer moths to bring about control.

Parasites, which have been studied and imported since 1920, are not yet a decisive factor, and apparently they won't be for some time to come.

We come back to the hard fact that the only known method of killing enough corn borers to keep down the insect's damage is attack upon it during its inactive, hibernating season, by mechanical means.

The mechanical control is brought about by plowing the stalks completely under, feeding fodder to livestock, shredding, burning, or completely disposing of the crop remnants so as to kill the borers.

Plowing controls when no pieces of plant material are left on the surface. The borers will crawl to the surface from some of the buried stalks, but if the surface is clean they find no shelter there, and die from exposure or the attacks of their natural enemies.

Putting corn into silos kills the borer, as they can not stand the fermentation process through which the ensilage passes.

Shredding or cutting into less than half-inch lengths kills practically all the borers.

Feeding the corn plant directly to livestock is a good control measure when care is taken to dispose of all scraps left about the barn or fields.

Burning must be resorted to in order to dispose safely of pieces of the corn plant not otherwise handled in a way to kill the borers.

When all of the previous year's corn crop is properly disposed of before June 1, 95 to 98 per cent of the corn borers are killed.

